SGCI first years

Internet of things and parallel computing infrastructures are both included in the Cyberinfrastructure which all play a huge role in enabling research, the Science of gateways community Institute had so many challenges in achieving the sustainability for science gateways, and the challenges were getting more and more complicated and important.

To be able to reach these requirements they had to reach out to a wide community and start on gathering its requirements, connecting to creators and all the users to diverse experts, which does need to be included and is connected to the use of science gateway frameworks and science gateway components.

The Science Gateways Community Institute consists of five areas to support creators and users to help with the measures for sustainability and to prevent the disappointment they started with when it was not maintained nor improved after certain points in their life cycle, the five areas are Incubator, extended Developer Support, Scientific Software Collaborative, Community Engagement, and Exchange, Workforce Development.

These five areas are collaborating and are all connected, science gateways users wanted to spread the knowledge in the community with existing solutions and to provide negotiations to be able to create their science gateways.

It is very clear that gateways play an essential role to connect resources and services in a fast-growing and increasingly complex research environment, all instruments of all types generate the data which needs analysis, and sometimes it will even include supercomputers, having supercomputers is great but well-designed gateways require careful thought and planning.

Science gateways are known by many different names and many different definitions such as virtual laboratories, virtual research environments, and research platforms, US principal investigators and leaders in the academic community that did prove that all science gateways are leading uses which include gateway interfaces to educational tools, computational tools, data analysis tools, and data collection, and they were able to find these resources through a survey that they did back in 2014 with 5000 different people.

Owning or creating a science gateway is very challenging and very hard to grow since it needs a lot of expensive resources and a variety of expertise including experts, cybersecurity professionals, quality assurance testers, community evangelists, software engineers, and project managers, which finds all these people that do have experience and are willing to risk it and start with an organization that is still taking its first steps and building itself, which does sound very challenging and hard, especially with how technology was back in 2016 and how it is different than nowadays in 2022.

The Science Gateways Community Institute’s Extended Developer Support, which is called ‘EDS’ modeled after the huge success of the Collaborative support services and the XSEDE project, the extended developer support is designed to help new gateways come into existence and existing gateways add major new capabilities needed for growth and development as mentioned The Science Gateways Community needed this due to the fact it being new and needing to expand.

XSEDE science gateways program on the other hand focuses primarily on integrating existing gateways with its resources, the Science Gateways Community Institute found that the Extended Developer Support was better supportive since it is more flexible and has a better user environment than XSEDE, where EDS support was allocated for an initial agreement of 6 months plus an additional 6-month extension for projects that will need more effort to complete their proposed work.

Funding was also another challenge for the Science Gateways Community Institute where they had better funding levels from EDS that were enough to support 12 projects at a time in which they were able to support 20 clients, so many departments funded the client gateways such as the Department of Energy, the National Institute of Health, and the Department of Homeland Security in addition to the NSF.

Scaling out of EDS support was another big challenge, the Science Gateways Community Institute wanted to gain maximum impact for each consultation beyond the direct support they were receiving from their clients, they had a lot more ambitious thoughts that they wanted to provide gateways with overviews of technical solutions to common problems so that they can evaluate and adopt solutions on their own without needing full EDS supported also working closely with the Scientific Software Collaborative to get client gateways listed in the software catalog and to help gateway frameworks improve their engineering processes so that they can be made easily available through gateway hosting services.

The components of any business are 6 pieces: People, data, issues, process, traction, and vision. Speaking of the vision for SGCI it included a core focus with a brief of marketing strategy that included three different zones, the 1-year zone, the 3-year zone, and the 10-year zone, and all of these zones were what are the targets they wanted to achieve for each year, with the people it consisted on the people that were assembled to the mission and were included as staff members as well, the data was focusing on the scorecard and selecting the data to track it either weekly or quarterly, processes are simply documentation of SGCI’s operational activities, and finally, most importantly traction is realized through their regular meetings where all voices were heard and SGCI were very open-minded and adapting all the ideas suggested during the meetings, which is very important to any company to make sure it listens to all the suggestions especially if it is looking for success.

Organization tools were quite common like Google Docs, Trello, Slack, Jira, and HubSpot, which each served a purpose and a need that SGCI wanted, having access to these resources had a significant impact and has helped the team achieve their goals, they needed support and they realized that the ideas in a gateway context were beyond there capacity, that is why working directly with programmers and development project managers through the EDS program was personalized, professional and extremely productive.

Conclusion:

Both articles were very beneficial, and they both mentioned the different aspects and challenges that SGCI faced and all of them do make sense, there are continuous competition and challenges that any company and community will face and I believe that SGCI approached them the right way and having EDS program by their side was also beneficial to and having EDS program was personalized, professional and extremely productive.

Work Citation

<http://nia.ecsu.edu/sgci/documents/a53_Wilkins-Diehr.pdf>

<http://ceur-ws.org/Vol-1686/WSSSPE4_paper_32.pdf>